Introduction

Executive Functions (EF)
- Higher order cognitive processes
- Required for planning and executing goal-driven behaviour (Barkley, 1997; Diamond, 2013; Miyake et al., 2000)

Inhibitory Control (IC)
- Control of attention
- Suppressing reflexes or ignoring distracting information (Diamond, 2013; Nigg, 2000; Friedman & Miyake, 2004)

Cognitive Flexibility (CF)
- Switching between task demands or problem solving strategies (Miyake et al., 2000; Wylie & Allport, 2000)
- Generating multiple exemplars or alternative solutions (Diamond, 2013)

Task Impurity Problem
- Multiple cognitive processes are recruited for EF tasks
- Difficult to assess isolated EFs (Friedman & Miyake, 2004; Huizinga et al., 2006; Miyake et al., 2000)

Study Questions
- How do children with SLI compare to typical peers on measures of executive function?
- Does group difference change when looking at inhibitory control or cognitive flexibility tasks?
- Is group difference affected by task factors such as verbal loading or task complexity?

Search Strategy

Systematic Review

Databases searched:
PsycINFO, Web of Knowledge, LLBA, Proquest Dissertations and Theses

Search terms:

Search Results

Initial search: 1424 studies
After abstract review: 33 studies

Exclusions:
- Insufficient data: 5 studies
- Not behavioural measures: 3 studies
- Tasks did not meet criteria: 4 studies
- Participants overlap: 2 studies
- Ceiling performance: 1 study

Total included: 18 studies

Inclusion Criteria
- Participants aged 4-13 years
- SLI: Language impairment despite typical nonverbal IQ
- Age-matched control group or available norms
- Behavioural measures of IC or CF
- IC tasks: inhibit entrained response or respond to select stimuli while ignoring distractors
- CF tasks: switch between tasks, or produce series of unique items
- Report adequate data for computing effect size

References


Conclusions

Inhibitory Control
- Children with SLI show poor inhibitory control relative to peers
- Perhaps poor verbal retention in children with SLI limits ability to keep goal of task in current focus of attention, increasing vulnerability to distractors

Cognitive Flexibility
- No difference between groups on classic measures of task switching
- Verbal demands of task do not appear to affect magnitude of difference between groups
- Variation in results for WCST suggests that it may not be a reliable measure of CF

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